

ABSTRACT

A receiver, a system, and an associated method, for receiving a radio signal carrying transmitted data that is subject to distortion in the transmission channel. The receiver includes a plurality of stages that perform parallel interference cancellation (PIC) with respect to a received space-time transmit diversity (STTD) signal to establish successively more accurate estimates of the transmitted data, including a receiver first stage being a RAKE-STTD receiver, a second stage including an minimum mean-square error (LMMSE) equalizer, and preferably a third stage also including an LMMSE. Each stage processes the estimates of the transmitted signal provided by the stage preceding it, as well as the received signal, to mitigate or eliminate as much transmission-channel interference as possible and provide a refined estimate for processing by subsequent stages. Improved channel estimation may be achieved by processing the pilot signal in similar fashion as well.